REMARKS

Applicant acknowledges the telephone interview conducted between Examiner Patel, the undersigned attorney, and Jeanne Brashear, Reg. No. 56,301. The undersigned attorney is very disappointed with the conduct of the interview.

Receipt of the office action mailed February 7, 2006 is acknowledged. Claims 1-11 have been rejected as being obvious over Rutter (U.S. Patent No.: 6,682,221) in view of Rigaux (U.S. Patent No.: 5,575,568) and further in view of Lederman (U.S. Patent No.: 5,492,339) and further in view of Rigaux '94 (U.S. Patent No.: 5,309,094).

In response to the rejection, claim 1 has been amended to positively recite, in part, that the sleeve is a one-piece sleeve and is constrained in rotation directly on the shaft. The encoder element is bonded to the sleeve, and the annular lip of PTFE is bonded directly to the annular surface of the encoder element.

By comparison, Rutter discloses a housing 16 having walls 12, 13, and 15, along with a curved annular end 14. The office action equates the housing 16 with the claimed sleeve. However, the housing 16 is connected to an inner race 5 which in turn is connected to a cylindrical shell 3 having a blocking heading 4, with the cylindrical shell 3 in turn being connected to the shaft 7. See the sole Figure of Rutter. The blocking heading 4 is disposed in a gap between the frontal surface 5s of the inner race 5 and the shoulder 6. The static sealing element 10 fits in this gap (Col. 2, lines 37-46), and the curved annular end 14 of the housing 16 is designed to bend in compression, in the space afforded by the gap. See column 2, line 60 to column 3, line 3.

In order to reach the claimed invention, one would have to eliminate the cylindrical shell 3 along with the inner race 5. In the process, the blocking heading 4 would also be eliminated. Such a modification would eliminate the necessary gap between the frontal surface 5s and the shoulder 6. Moreover, any attempt to place the housing 16 directly on the shaft 7 would eliminate the ability of the curved annular end 14 to bend under compression, as the housing 16 would be disposed directly on and in abutment with the shaft 7. Further, the blocking element is expressly claimed. Accordingly, there can be no suggestion to make the needed modifications without entirely ignoring the express teachings of the reference, and without destroying the clearly articulated purpose of at least some of the

component parts of the reference. Consequently, there can be no *prima facie* case of obviousness based even in part on Rutter and the rejection must be withdrawn.

Rigaux '094 adds nothing of relevance. The coder element 11 has a horizontal leg secured to the body 6 and a vertical leg supporting the magnets 14 and 15 when viewing Figure 2. There is no seal connected to this piece. The seal 22 is mounted to a short L-shaped bracket, which in turn is mounted to the rigid sensor 12 assembly having the magnetic flux concentrator 18 and the induction coil 17. Thus, the seal is not bonded to a magnetizable polymer. Instead the seal 22 is secured to a short L-shaped bracket (having cross-hatching to match the rigid bracket 11), which in turn is connected to the assembly 12. On the embodiments of Figs. 8 and 11, again the seal is mounted to the L-shaped support brackets, not to a magnetizable polymer. On every embodiment of Rigaux '568 the seal is mounted to and supported by one of the legs of the support element 13. On many embodiments, the seal is stationary while the encoder rotates, or *vice versa*. Lederman uses a complicated nested two-piece inner and outer annular casing arrangement, which can hardly be viewed as a one-piece sleeve. Further, there would be no suggestion to ignore or discard this expressly-taught two-piece construction of Lederman, and thus no *prima facie* case of obviousness could be established based even in part on Lederman.

Any rejection based upon Kurth '264 would be puzzling indeed. Why one would look to a reference entirely lacking an encoder wheel in order to find a teaching regarding how one should attach an encoder wheel simply cannot be explained, unless one were to resort to impermissible hindsight. The rods 16 are not magnetic or encoded or anything of the sort, but instead are placed such that the rods 16 cause a "small restoring effect" on the operation of the sealing arrangement 1. Column 4, lines 26-30. Moreover, the Kurth reference uses two apparently rigid L-shaped support elements 4 and 5 in order to adequately support the seal 7. There simply can be no suggestion to eliminate either one of these expressly taught L-shaped support elements in order to reach the claimed invention. For example, what would support the seal 6 if the support 4 were removed, and what would be the purpose of the elastomer 11 if the support 4 were removed? Similarly, what would support the seal 7 if the support 5 were removed, and what would be the purpose of the elastomer 12 if the support 5 were removed? All of these changes would completely alter the principle of operation of the reference, if not destroy the functionality of the reference

entirely. Consequently, there can be no *prima facie* case of obviousness based even in part on Kurth.

The rejection is overcome, and claim 1 is allowable, as are all claims that depend from claim 1.

New claim 13 positively recites, in part, a dynamic seal comprising a rotary shaft, a metal sleeve being constrained in rotation directly on an outer surface of the shaft, an annular encoder element formed of a magnetizable polymer bonded directly to the metal sleeve and arranged to present a polarized mark, and an annular sealing lip formed of PTFE and bonded directly to the encoder element and bonded exclusively to the encoder element.

By comparison, the seal of Rutter plainly is supported by both the encoder wheel 8 as well as the annular end 14 of the housing 16. There can be no suggestion to modify the reference to reach the claimed invention without using impermissible hindsight, and thus there can be no *prima facie* case of obviousness. For example, in order to reach the claimed invention one would have to eliminate the annular bend 14, but this annular bend 14 supports the static seal 10 having the lips 21 and 22. Further, the reference plainly states that "the device 1 comprises a shield 30, which is made of the same material as the elements 10 and 11, and which provides a continuous connection between elements 10 and 11 themselves." Col. 3, lines 22-25. Chopping off the annular end 14 would eliminate this expressly taught "continuous connection" between the seals 10 and 11, and therefore there can be no suggestion to make the modification. Consequently, there can be no *prima facie* case of obviousness based even in part on the Rutter reference and claim 13 is in allowable form, as are the claims dependent upon claim 13.

Lederman adds nothing of relevance to claim 13, either alone or in combination with any other reference. Further, on each and every embodiment of Rigaux '568, save for the embodiment of Figure 8, the seal 23 is mounted to the support element 13, not to the encoder wheel 12. On Figure 8, the seal 22 plainly is supported by the rigid leg 13c of the support element 13, and plainly cannot satisfy the limitation of claim 13 that the annular sealing lip is formed of PTFE and "bonded directly to the encoder element and bonded exclusively to the encoder element." This aspect of Fig. 8 cannot be modified without destroying express teachings of the reference:

> Thus mounted, the encoder 12 is completely protected from the external elements by which it is in danger of being damaged, since it is enclosed in the space bounded by the external 8 and

internal 9 races of the bearing 1, the protection and support element 13, the support 22, the seal 14 and 15.

Col. 6, lines 12-17. There can be no way to modify the embodiment of Fig. 8 to reach the claimed invention without removing the leg 13c, which would destroy the "completely protected" feature of the invention. Thus, no *prima facie* case of obviousness can be based even in part on Rigaux '568.

Rigaux '094 suffers the deficiencies noted above. Kurth suffers the same deficiencies noted above. Accordingly, no proper *prima facie* case of obviousness can be established based on the cited references, and claim 13 is in allowable form, as are the claims dependent on claim 13.

In view of the foregoing, this application is in condition for allowance.

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Respectfully submitted,

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